MSIAC M&S Newsletter

September 2005

The Modeling and Simulation Information Analysis Center (MSIAC) M&S Newsletter is now available as an automatic service. Simply send an email to digest-subscribe@pan.msiac.dmso.mil to be added to our mailing list. This list is for the Newsletter only and will not be used for any other purpose. Please note that it is not necessary to subscribe each month.

If you would like to submit an article to be highlighted in the *MSIAC M&S Newsletter*, please forward the article (along with its source data and URL, if available) to the MSIAC Help Desk no later than 15 workdays prior to the publication of the next Newsletter. Normally, the Newsletter is published on/about the first of each month. Potential articles as well as questions or comments on the Newsletter can be emailed to msiachelpdesk@msiac.dmso.mil.

The MSIAC also publishes the quarterly *MSIAC Journal On-line*. If you would like to see the current issue of the *MSIAC Journal On-line* visit: http://www.msiac.dmso.mil/journal. If you would like to submit an article for the Journal On-line, please email your paper or article to msiachelpdesk@msiac.dmso.mil at least 45 days prior to the next publication date.

UPCOMING EVENTS

15 September 2005
Global Information Grid M&S Community of Interest Proposal Deadline
Alexandria, VA

18-23 September 2005
2005 Fall Simulation Interoperability Workshop (Fall SIW)
Orlando, FL

26-29 September 2005
ITEA International Symposium
Albuquerque, New Mexico

27-29 September 2005
Modeling and Simulation Staff Officer Course (MSSOC)
Tactical Training Group Pacific
San Diego, CA

18-20 October 2005
MSSOC
Albuquerque, NM

24-27 October 2005
8th Annual Systems Engineering Conference
San Diego, CA

25-27 October 2005
The Huntsville Simulation Conference 2005
Huntsville, AL

ITEA INTERNATIONAL SYMPOSIUM

"Transformational Test and Evaluation – Programs, Methodologies and Lessons Learned for T&E in the Joint Force and Coalition Battlespace" is the theme of the International Test and Evaluation Association's annual International Symposium.

Transformation has become the key word of the world we live in. For those in the Defense business, we continue to see transformational changes in how the military is manned, equipped, trained, deployed and employed. For those in the acquisition and T&E business, we continue to see transformational changes in how we approach our system's development, testing, fielding and sustainment. We are well past platform-centric, single-service methods satisfactorily assessing whether

our system will work. What is required today is the ability to immerse our systems under test in a representative joint and coalition environment to determine not only system performance but also their ability to accomplish their expected joint tasks.

Keynote speakers will address these transformational issues at a top level, from the perspective of the U.S. Government, non-U.S. transformational approaches, and commercial industry.

GLOBAL INFORMATION GRID (GIG) MODELING AND SIMULATION COMMUNITY OF INTEREST (COI) TECHNICAL EXCHANGE MEETING

The Modeling & Simulation Community of Interest (COI) for the Global Information Grid (GIG) is one of a number of COIs established with the vision for managing data and software services in the Net-Centric Environment (NCE) known as the GIG as outlined in the Department of Defense (DoD) Net-Centric Data Strategy. The M&S COI is responsible for facilitating the transformation of M&S applications, architecture(s), and products from legacy implementations to GIG-enabled, web-based services and products.

The mission of the M&S COI is to serve as a DoD enterprise forum within which to develop a vision and plan for how modeling and simulation capability transitions to the GIG environment and transforms to support the objective Joint Force. It sponsors discussion and collaboration with the other mission communities of interest (COIs) and the GIG technical community regarding M&S services and standards required by the underlying Net Centric Information Sharing/Data Strategy.

M&S COI Focus Groups have been established in the areas of **Metadata**, **Data Mediation**, and **M&S Services**. Additional information can be found at the COI web portal http://ms-coi.msiac.dmso.mil/. The M&S COI is currently seeking proposals for briefings and/or demonstrations to be presented at an upcoming Technical Exchange Meeting, tentatively scheduled to occur Nov 2-3, with possible extension to Nov 4. The proposal submission deadline is 15 September 2005.

VIRGINIA LAUNCHES EMERGENCY MANAGEMENT SIMULATION CENTER

Virginia Gov. Mark R. Warner (D) inaugurated a new simulation and modeling center in Southeastern Virginia on Wednesday to support training for homeland security and defense. The center is backed by 17 major IT companies.

The state-of-the-art Emergency Management Training, Analysis & Simulation Center is billed as the first in the country to focus on using IT-based training simulations for command and control managers rather than for individual first responders.

Initially, the new center will be housed at Old Dominion University's Virginia Modeling, Analysis and Simulation Center in Suffolk until new facilities are built.

The new center has a 17-member corporate board of directors including: Alion Science and Technology Corp., Anteon Corp., BMH, The Boeing Co., Booz Allen Hamilton Inc., Capstone Inc., Cubic Corp., DDL Omni Engineering Corp., Evidence Based Research Inc., General Dynamics Advanced Information Systems, Lockheed Martin Corp., Loyola Enterprises Inc., MYMIC LLC, Northrop Grumman Corp., Raytheon Co., Science Applications International Corp. and WernerAnderson Inc.

"This new facility will combine world-class expertise and state-of-the-art modeling and simulation for training, analysis and operational support for disaster management and homeland security situations," Warner said in a news release. For complete article visit: http://www.simulationinformation.com/

BLACK HAWK UP

The Army's Redstone Arsenal in Huntsville, AL, is using dashboards to help coordinate its Black Hawk helicopter modernization program.

A dashboard ties together information from a variety of sources and presents it in a format those users—engineers or managers—are able to readily understand. In this way, dashboards can open a window into diverse data sources and show the interconnection of that data in a meaningful way.

The upgrade aims to extend the helicopter's range, add new armor, digitize the cockpit and achieve better fuel efficiency.

The improvements will also require increasing the Black Hawk's lift to carry new equipment, more personnel, and Humvees instead of Jeeps.

All this involves coordinating more than 1,200 aircraft through a multiphase process that involves more than 4,000 separate parts.

This program, which may require decades to complete, clearly requires meticulous supervision, and dashboards are a critical aspect.

Dan Holder, an electronics engineer in Redstone's aviation and missile research, development and engineering center, has the job of simulating the modernization process.

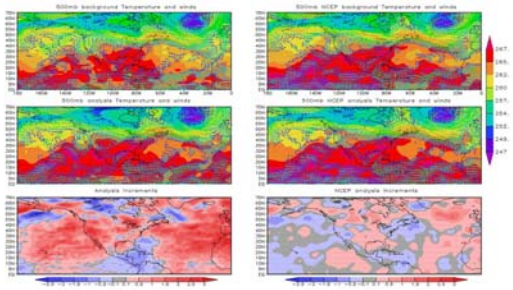
This includes creating models that take into account the many dependencies involved—the logistics of moving helicopters to the factory, coordinating parts and inventories, arranging work schedules—and the steps involved in each phase of the upgrade procedure.

Holder uses not one, but 15, dashboards, based on Witness simulation software from Lanner Group Inc. of Houston, to monitor the program. As a result, officials estimate, the program will achieve cost savings of about 30 percent.

For example, one dashboard is capable of showing any part on the helicopter in 3-D. Users can zoom to where the part fits and see what it looks like from any angle. This display is connected with information about inventory and alternate vendors for parts, if necessary.
By simulating the assembly of parts in the Black Hawk, Holder and his team have found ways to simplify the work, save time and reduce costs.

For complete article please visit:
http://www.gcn.com/24_22/software/36573-1.html

FIELD TESTS UNITE WEATHER AND CLIMATE MODELS



Researchers from NASA's Goddard Space Flight Center (GSFC) and several other government and academic institutions have created four new supercomputer simulations that combine their mathematical computer models of the atmosphere, ocean, land, surface, and sea ice. These simulations are the first field tests of the new Earth System Modeling Framework (ESMF), an innovative software system that promises to improve and accelerate U.S. predictive capability ranging from short-term weather forecasts to century-long climate change projections.

Although still under development, many organizations and research institutions are starting to adopt ESMF. Under a partnership, groups from NASA, the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), the Department of Energy (DOE), the Department of Defense and research universities are using ESMF as the standard for coupling their weather and climate models to achieve a realistic representation of the Earth as a system of interacting parts, unifying much of the modeling community. ESMF makes it easier to share and compare alternative scientific approaches from multiple sources, uses remote sensing data more efficiently and eliminates the need for individual agencies to develop their own coupling software.

"The development of large Earth system applications often spans initiatives, institutions and agencies, and involves the geosciences, physics, mathematics, and computer science communities. With ESMF, these diverse groups can leverage common software to simplify model development," said NASA ESMF principal investigator Arlindo da Silva, a scientist in GSFC's Global Modeling and Assimilation Office. For complete article visit: http://www.nasa.gov/centers/goddard/news/topstory/2005/esmf.html

COMMAND AND CONTROL OPERATIONAL PROTOTYPE SUCCESS AT EXERCISE

(SUFFOLK, Va. - Aug. 26, 2005) – Joint Systems Integration Command's (JSIC) Command and Control on the Move (C2OTM) project reached a major milestone recently during the U.S. Army's V Corps mission rehearsal exercise (MRX) in Grafenwohr, Germany.

According to JSIC C2OTM project leader Navy Lt. Cmdr. Stephen Fahey, V Corps assessed the program's operational prototype in real-world conditions, and the system successfully met all expectations.

JSIC, a U. S. Joint Forces Command (USJFCOM) subordinate command, focuses on near-term transformation of joint force command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities through prototype development, interoperability testing, and assessing new technologies.

C2OTM represents one of several programs under development at JSIC which address different aspects of battle management command and control. According to Fahey, the system gives task force commanders the ability to move around the battlefield while maintaining situational awareness.

"We've built a system where the commander doesn't have to trade capability for mobility," Fahey said. "It's as if he never left his desk." For complete article visit: http://www.jfcom.mil/newslink/storyarchive/2005/pa082605.htm

VV&A DOCUMENTATION STANDARDIZATION

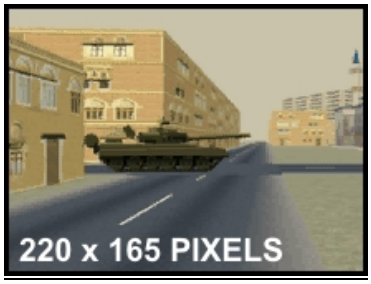
The NMSO VV&A Team developed *"Standard Templates for VV&A Documentation"* as a companion document to the *DON M&S VV&A Implementation Handbook*. Once finalized, this document will be vetted through the M&S Standards Process and will provide the foundation for the VV&A Documentation Tool. The document was released for review in July. The target date for final approval is 30 September 2005.

VV&A STANDARDIZATION ACROSS DoD

Copying the successful effort to integrate the M&S Standards process across DoD, the DoD M&S Working Group has tasked Navy to lead their next integration effort - VV&A. Achieving consistent VV&A documentation across DoD is seen as an absolute requirement for M&S to succeed in the future Global Information Grid (GIG) enabled environment. The 15 July Kickoff meeting was attended by 17 members from the Air Force, Army, DMSO, NMSO, and NSA. It was noted that other organizations needed to be included. All organizations agreed to the following Plan of Action and Mile Stone (POA&M):

- Each organization provides their SME(s) for the documentation review to DMSO POC NLT 27 July 2005.
- SMEs conduct a comparison between their requirements and the Navy VV&A documentation templates. Report the results to the VV&A Integration Team by 16 September 2005.
- The next Team meeting will be scheduled during the first week of October to work resolution of any issues from the comparison reports.

MODELING AND SIMULATION TECHNOLOGY INTEGRATION PLUS (MSTI+) – ADVANCED INTERACTIVE COURSEWARE DEMO



A military analyst from Alion Science and Technology, a McLean, VA technology company, demonstrated newly developed training software at the National Guard Master Gunner Workshop, Colorado Springs, CO, in March 2005. The presentation of a current U.S. Army Armor Center training program as interactive computer-based courseware was enabled by a framework called Modeling and Simulation Technology Integration Plus (MSTI+).

The demonstration provided trainers the ability to download the courseware to a server for web-based interactive classes or to allow soldiers to complete blocks of instruction at their own pace by accessing the material through an advanced distance learning (DL/ADL) hub. In addition, the courseware can be downloaded to individual PCs. Therefore, the training material can be available whenever and wherever the user requires. Since the MSTI+ framework is based on well-tested commercial-off-the-shelf (COTS) software, the developers could easily and quickly change the courseware focus to a wide variety of different subjects. The figure illustrates the MSTI+ framework applied to a tank crew training course. The participants at the Master Gunner Workshop immediately understood the utility of the MSTI+ capability and many have expressed an interest in a more detailed demonstration of the framework for other types of individual training.
